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SOME GEOGRAPHIC INFLUENCES IN THE
SETTLEMENT OF MICHIGAN AND IN
THE DISTRIBUTION OF ITS
POPULATION

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PHYSICAL CONFIGURATION

Location. Michigan is situated on the northern boundary of the United States and among the Great Lakes. Its position in the interior of a great land mass determines a continental type of climate, but fortunately this is modified by the influence of the Great Lakes. The Lower Peninsula projects like a great arm between Lakes Michigan and Huron and across a great continental highway of commerce, while the Upper Peninsula occupies an important position in relation to the commerce of the Northwest. Michigan's location has been from the first an important factor in shaping its history. The influence of its location first appears with the French occupation in 1641. The French recognized the strategic and commercial importance of the lake position and placed their settlements accordingly. Its effects are further seen in the occupation by the English and their attempt to retain possession of the country after legally surrendering it; in the determined efforts of the United

States to gain possession; in the settlement and distribution of population; in the distribution of cities and industries; and in the development of its natural resources of forests, minerals, and soils.

Topography. The general elevation of the Upper Peninsula is 400 to 1400 feet above Lake Superior (Fig. 1) and that of the Lower

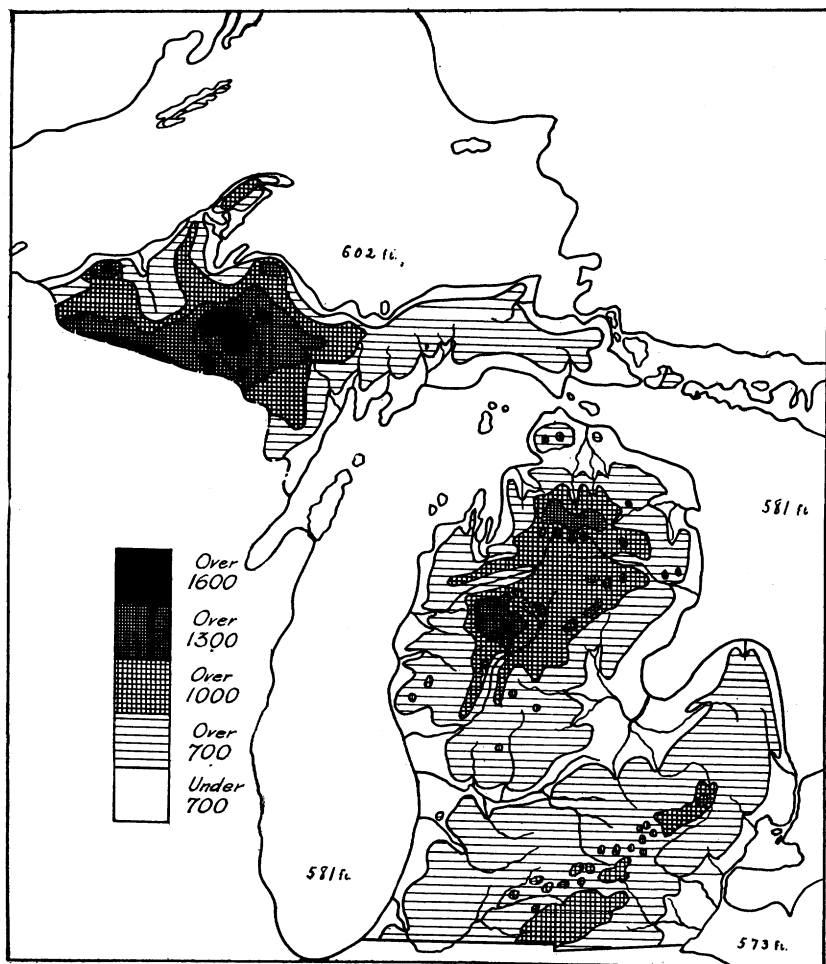


FIG. 1.—Relief Map of Michigan (after Jefferson). Heights in feet above sea level.

Peninsula from 400 to 600 feet above the surrounding lakes. The eastern and western portions of the former present marked topographical and geological differences. The western portion is quite rugged, some of the hills reaching 1200 to 2000 feet above sea-level.

The copper ranges composed of Proterozoic (Precambrian) rocks extend from Keweenaw Point to the Wisconsin line. The iron ranges of Iron, Gogebic, and Marquette Counties* lie to the south and east of this group. The eastern portion of the peninsula slopes southward to Lake Michigan from a watershed that lies near Lake Superior. This section is underlain by Cambrian, Ordovician and Silurian sedimentary formations that dip gently to the south, and therefore lacks much of the ruggedness of the western part. The details of the topography are in general controlled by a thick mantle of glacial drift, especially in the east.

The Lower Peninsula is an undulatory plain; the hills are rounded and seldom constitute conspicuous features. The northern part of the peninsula is higher than the southern and culminates in a watershed which, in Osceola County, is about a thousand feet above the lake level. The Huron shore is generally low and is being extended lakeward in most places, while the western shore is characterized by bold bluffs which are being worn away. The watershed of the southeastern part coincides with a northeast-southwest line through Hillsdale and Lapeer Counties. The drainage, therefore, is to the northwest and southeast. The ascent from the east to this watershed is so gradual that, in crossing the peninsula by way of the valleys, it would scarcely be recognized. These watersheds are separated by a strip of land extending from Saginaw Bay to the mouth of Grand River on Lake Michigan, which is said not to exceed 72 feet above the lake level.† This strip marks approximately the former connection between the glacial Lakes Chicago and Saginaw. It is low, nearly level, and has a very fertile soil, the effects of which are seen in the distribution of population (Figs. 9, 10, 16) and in the size of farms in 1904 (Fig. 15). This ancient valley with its rich soils is likely to be of increasing importance in the economic life of the state.

Rivers of the Lower Peninsula. The most important rivers of the western slope are the Manistee, Muskegon, Grand, Kalamazoo and St. Joseph. The last three have their sources within an area of a few square miles in Hillsdale County. The principal river of the eastern slope is the Saginaw, which has several large and important tributaries. The rivers from the north and west are led to

* The location of counties, places, etc., mentioned more especially in the section on the history of settlement, which may not be familiar to the reader, can be referred to in any general atlas, *e. g.*, the Century Atlas (Vol. XII of the Century Dictionary & Cyclopedia), Pls. 22 and 23.—ED.

† R. Adams: *Publ. Mich. Pol. Sci. Assoc.*, Vol. 3, p. 163.

it by the Tittibawassee; those from the south and southeast by the Shiawassee and Flint; and those from the east and southeast by the Cass. Many smaller streams lead in all directions to the lakes from the watershed in the northern part of the peninsula. None of the rivers mentioned are navigable to any great extent, yet in some cases the mouths are deep and wide enough to serve as harbors for medium-sized vessels, and the Saginaw may be navigated by such vessels for a few miles. The rivers furnish, however, an ample supply of waterpower, and those which flow through the timber area have been of vital importance to the lumber business as mediums for transportation from well-nigh inaccessible parts of the interior. The utilization of the greatest portion of Michigan's vast pine timber would have been delayed many years but for these streams. They not only aided but hastened the development of the lumber industry, and hence the settlement of the state. In recent years the importance of the rivers has been lessened by the railroad. The Muskegon and Saginaw Rivers with their tributaries have been of greatest importance in the lumber trade.

Surface Formations. The surface of the state is covered with Pleistocene deposits, with the exception of a few small localities. These deposits of drift range from a few inches to several hundred feet in thickness, many rather than few feet being the average. It is this deep mantle of glacial material that gives shape to the surface. The glaciers deposited an indiscriminately mixed mass of all kinds of rock material from fine clay to large boulders. Not all of the drift, however, occurs in this heterogenous condition, for water was always present and was constantly sorting and resorting the fine from the coarse and redepositing it in alternating beds of clay, sand and gravel. When the ice receded, the surface of Michigan was studded with lakes of varying sizes. More than 5,000 remain, and hundreds more have left evidence of their former existence. The famous "white oak openings" are said to mark the beds of former lakes, and this is probably true in some cases at least. Michigan owes to the Ice Age its great variety of soils, varying from the fertile clay and sandy loams of the central valley to the infertile sands of the jack-pine plains. Its agricultural possibilities, so far as soil is concerned, were determined at this time, and the activity of the people since the earliest settlement has been an effort to adjust properly their crops to the conditions imposed. Nature had nearly accomplished the adjustment of plant growth to the soil before man came and had distributed her great forests and allied vegetation in accordance

thereto. The original timber distribution represents, therefore, a nearly accurate soil map of the state.

One should see the Lower Peninsula lying before him like an outstretched hand. In the palm, which extends from the mouth of the Saginaw River to that of the Muskegon, and which includes scarcely a third of the state, are its orchards, vineyards, gardens, granaries, and its flocks and herds. This third of the state yields more than three-fourths of its total commercial product. Here is nearly all of the coal and salt of the state; 73 per cent. of the entire population; 64 per cent. of its cities of over 10,000 inhabitants, and all of more than 13,200. Here are its principal manufactures and more than 75 per cent. of its railways. A region so varied in soils, so pleasantly diversified in surface, and favored in climate above most other districts of the United States in the same latitude, was destined from the beginning to have its history greatly influenced thereby.

HISTORY OF SETTLEMENT

Fur Trade Attracts the French. It was this Great Lakes region, and especially Michigan, where "the western currents of French and English colonization, starting from distant points on the St. Lawrence and along the Atlantic, after a century and a half of unfriendly rivalry, with occasionally bloody and devastating wars, met at last and blended in a peaceful and prosperous commonwealth."*

The St. Lawrence and its tributaries guided the French to Lake Huron and to Michigan. Their subsequent operations in the Michigan territory looked first and chiefly to profitable fur trade with the natives, and secondarily to their conversion. Trade and religion, however, were inseparably united, and so the localities best suited to the priest and to the trader were identical. The population of the French posts usually consisted of a commandant, Jesuits, soldiers, traders, halfbreeds, savages, all of whom took their respective parts in a system of religion and trade. Missionaries and traders understood each other perfectly and seldom failed to work in harmony.

Strategic Positions Selected for Trading Posts. The greater portions of the shores of the lakes were well known before the opening of the eighteenth century, and the "key" positions had been determined. As early as 1641 two Jesuit Fathers visited the passageway between Lakes Huron and Superior and established a

*T. M. Cooley: Michigan, p. 1.

mission for the Chippewas. Sickness and death, however, caused its early abandonment. The importance of this location was too great for it to be given up permanently, and Father Marquette was accordingly sent there in 1668, and founded the first permanent settlement in the state. In 1671, being relieved at the Sault, he gathered the Indians about him at the passageway between Lakes Michigan and Huron and founded St. Ignatius. Michilimackinac, he says, "is the key and, as it were, the gate for all the tribes from the south, as the Sault is for the north, there being in this section of the country only these two passages by water; for a great number of nations have to go by one or the other of these channels in order to reach the French settlements. This represents a peculiarly favorable opportunity, both for instructing those who pass here and also for obtaining access and conveyance to their places of abode." He adds that this place is "the home of the fishes;" though existing elsewhere in large numbers, this is really their "home." "It is this attraction that has heretofore drawn to a point so advantageous the greater part of the savages in this country, driven away by fear of the Iroquois." Such locations soon became ideal trading posts.

The route for Indian trade at this time, from Montreal and Quebec, was by way of the Ottawa River, Lake Nipissing, the French River, Georgian Bay and Lake Huron to Sault Ste. Marie and the Straits. The passageway between Lakes Huron and Erie was known, yet little if any used before 1700. Its importance, however, was known to the colonial authorities after the journey of Galinee in 1670. About this time Antoine de la Motte Cadillac appeared upon the scene. He was a man of mark and ability, quick to grasp the geographic importance of the situation, quick to form his plans, and equally enthusiastic in their execution when offered the opportunity. He became convinced (1) that here, rather than at any of the upper stations, friendly Indians could be concentrated for their own protection and that of the French; (2) that from this point the fur trade could best be controlled;* and (3) that the strategic† as well as the commercial advantages of this location were greater than those of any other point on the lakes. He desired a point within easy reach of Lake Erie, with high banks, and with easy access to the deep channel of the river; having unrestricted communication with the country in the rear;‡ and with a climate and soil that would make agriculture profitable, assuring sufficient food for a growing and permanent community.§ A point with these

* T. M. Cooley: Michigan, p. 18.

‡ H. A. Griffin: *Mag. of Western History*, Vol. 2, p. 573.

† Land Marks of Detroit, pp. 3-5.

§ T. M. Cooley: Michigan, p. 19.

advantages was selected, and a settlement made in 1701, which was subsequently called Detroit.

Detroit is nearly 800 miles from the seaboard and in the ordinary course of colonial development would probably not have been settled before the beginning of the nineteenth century. The reasons that Detroit antedated "by a full century the progress of empire westward is the fact that she stands at the gateway of navigation to the great Northwest, and the whole lake system was narrowed down to her situation as if to impart velocity to the current of her career."* The later growth and distribution of population in the southern peninsula together with the development of agricultural and other industrial interests, and the attendant railroad construction, made Detroit the metropolis of the state and one of the most important cities in the lake region. From 1701 to 1830 the history of Detroit is, in the main, the history of Michigan.

As we think to-day of these three "keys" to Michigan and the Northwest, we seldom recall how long ago great significance was attached to their location, and how far it put them ahead of the western tide of civilization. The early date at which historical importance attaches to the Michigan straits between the lakes may be emphasized by comparison with other well known events. The Mackinac Straits and Sault settlements were founded one and two generations respectively before Detroit, yet William Penn located his land grant only 19 years before Cadillac founded Detroit. Detroit was 53 years of age when George Washington began his fort at Pittsburg, hundreds of miles in advance of civilization; and 129 years old when the site of Chicago was surveyed.* Its two centuries of existence have been remarkable. "Five times its flag has changed; three different sovereignties have claimed its allegiance, and since it has been held by the United States, its government has been thrice transferred, twice it has been besieged by the Indians, once captured in war, and once burned to the ground!"†

Non-Development Leads to French Failure. Paradoxical as it may seem, Michigan's "keys" to the lake region and the Northwest were among the ultimate causes of the French failure to hold permanently the country they had explored. As stated previously, these points were occupied primarily as trading stations, and a full century of French occupation did not change their character. The well-laid plans of Cadillac were ignored and very little agriculture or home making was attempted or encouraged. The settlements

* H. A. Griffin: *Mag. of Western Hist.*, Vol. 2, p. 575.

† *Western Monthly Mag.*, Vol. 3, p. 244. Address before Michigan Hist. Soc., 1834.

were hundreds of miles from the French seat of government at Quebec, with a trackless wilderness between. The tie binding them to the soil was very weak, only slightly stronger than that of the savage, and they were engulfed by the very vastness of the expanse which they were attempting to occupy. In spite of their strategic positions they proved unable to withstand the slower but irresistible advance of the English, who left unoccupied land behind them for a short time only, and by building homes and tilling the soil secured a much stronger hold upon the country. Since that time the ties binding the people of the state to the soil have become ever stronger, although a complete adjustment has not yet been secured. The British relinquished the Northwest to the United States with great reluctance. The importance of its location led Englishmen to remain in Michigan after the Treaty of Paris. By holding the region, England continued to control the lucrative fur trade and possessed a vantage ground from which to renew the war against the United States. Furthermore, retention of the posts upon the Great Lakes would enable the English to retain the support of the Indians, who constituted a "buffer state" between the Northwest and the tide of American settlement that was slowly advancing toward the Ohio. There is ample evidence that, to accomplish this end, they incited the Indians to commit most terrible crimes against the American settlers.*

Settlement Delayed by Erroneous Ideas of Geography. The settlement of Michigan was delayed by erroneous notions of its geography. It was commonly believed that a fine belt of territory lay along the eastern border, but that the interior was a vast swamp which might well be left to the fur-bearing animals and to the trappers and hunters.† Even the geographer Morse taught this in his books then used in colleges and schools. Support was likewise given to it by Government surveyors who made an examination extending 50 miles north of the Ohio and Indiana boundary lines, reporting that they found only tamarack swamps, bogs and sand barrens, with not one acre in a hundred, if there were one in a thousand fit for cultivation.‡ Such a report would have been impossible had the work been honestly done. It was accepted, however, and did much to divert the emigrant to Illinois and the Middle West.

Active Settlement Begins. The settlement of Michigan did not begin actively until after 1812 (Fig. 2). From 1800 to 1810, the

* Landmarks of Detroit, p. 227.

† T. M. Cooley : Michigan, p. 192.

‡ Rept. of Surveyor General of Ohio, 1815. Cited by R. C. Kedzie : Michigan and Its Resources, (1893), p. 24.

population increased 1,005, or 26 per cent. The settlers, almost without exception, followed the water courses, as they afforded the only means of transportation. In December 1811 the inhabitants of the state were distributed as follows: 1,340 on the Raisin, Miami and Huron Rivers of Lake Erie; 2,227 at Detroit, along the Rouge, Ecorse and Huron Rivers of Lake St. Clair, and 1,070 on Mackinac Island and in the scattered northern settlements.*

Two million acres of bounty land had been set aside to induce settlers to come to Michigan, but few came owing to the false impressions of its soil and climate. Not until 1818 was a public land office secured for the territory and not until then did rapid settlement begin. The same year marked the opening of steam navigation on the Great Lakes, the first steamboat reaching Detroit in 1818 and Mackinac the next year. The influence of the steamboat was little felt before 1820, but later it assured to the emigrant a cheap, convenient means of reaching the West. During the decade from 1810 to 1820 the population nearly doubled, increasing 87 per cent., most of the increase being from immigration in the last two or three years of the period.†

At the beginning of the next decade most of the people were confined to the southeastern lake front and along the lower courses of streams. Mount Clemens had sprung up at the mouth of the Clinton River, a grist and saw mill had been erected and a schooner was plying (1821) between the new town and Detroit. This gave the village a prestige over other surrounding settlements, and Macomb County soon began to increase rapidly in population, reaching 2,400 by 1830; 9,700 by 1840; and 15,500 by 1850. In 1828 an additional impetus was given by the construction of a Government road from Detroit to Lake Huron.‡ Pontiac, a few miles farther up the Clinton River, also had become an important center. It was connected with Detroit by road in 1818, and in 1820 became the county seat of Oakland County. Settlers were attracted to Oakland County because of (1) its nearness to Detroit and (2) its many "openings" and good soil. Its geographic position "gave it unusual commercial and political importance."§ In 1830 it had 4,900 inhabitants, in 1840, 23,600, and by 1850, 31,200. The counties bordering Lakes Erie and Huron grew rapidly following the advent of the steamboat. Monroe had a population of 3,300 in 1830, and of 9,900 in 1840; St. Clair, 1,100 in 1830 and 4,600 in 1840; and Wayne, 6,700 at the beginning and 24,100 at the close of the same decade.

* American State Papers. Cited in Census of Michigan, 1904, Vol. 1, p. xvi.

† Census of Michigan. Vol. 1, p. xviii. ‡ *Ibid.*, p. xviii. § Census of Michigan, 1904, Vol. 1, p. xviii.

Erie Canal Hastens Settlement. The great event of this period (1820 to 1830) "and that which had most to do with giving sudden impetus to the growth of Michigan and bringing to it the population that shortly had planted settlements and reared churches and school houses all through its central and southern parts, was the opening in 1825 of the Erie Canal."* The influence of this canal together with Great Lake steam navigation on the development of Michigan and the Middle West can scarcely be overestimated. "The following year (1826) found at least a half dozen steamers plying on the lakes and the trip from Buffalo to Detroit being made daily,"† furnishing at low rates excellent and comfortable passage for the emigrant.

Not until 1830 did any considerable part of Michigan have more than two inhabitants to the square mile (Fig. 3). The population was in that year almost wholly confined to the southeastern corner, where it had spread out from the points of landing on Lake Erie. The only exception was in the St. Joseph valley, where the Carey Indian Mission, established upon the site of the city of Niles, became a center of expansion. This mission was established here in 1822 for the Pottawattomie Indians, the site being well within their territory and in easy river communication with Lake Michigan, by way of which their supplies came by boat.‡

Detroit and Toledo Centers of Distribution. The influence of Detroit upon the distribution of population is apparent from Figure 3. At first the emigrant was intent on getting farther to "The West" and swept straight across the southern part of the peninsula.§ Michigan seems to have been a mere roadway to the states beyond it. It was in fact easier to go to Iowa than to the central part of Michigan through its giant forests. There were two principal wagon roads west from Detroit and one from Toledo. The Territorial and State Roads led from Detroit: the former through Ann Arbor, Jackson, Marshall and Mottville; the latter through Ypsilanti, Tecumseh and Jonesville.§ The road from Toledo passed through Adrian, Hillsdale and Sturgis, and met the Territorial Road at Mottville. The settlers arriving at Detroit or Toledo would follow one or the other of these routes. Many settlers traveling these highways were attracted by the "oak openings," changed their plans, and cast their lot with the Peninsular State. Hence the settlements did not reach far north of these routes, and as late as 1856 were "confined mostly to the openings, and to the intervening belts of timber,"§ while the

* T. M. Cooley: Michigan, p. 203.

† Census of Michigan, 1904, Vol. 1, p. xviii.

‡ Isaac McCoy (the founder): History of Baptist Indian Missions, p. 118. G. S. Bailey: The Carey Indian Mission, p. 5.

§ Jacob Ferris: The Great West, p. 180.

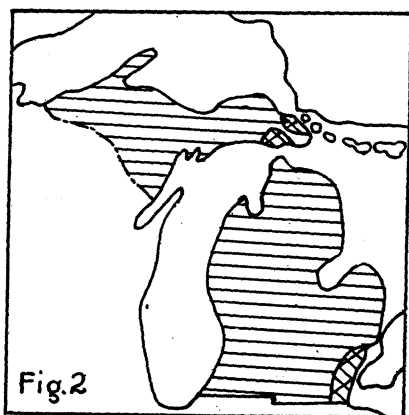


Fig.2

*Distribution of Population
1810*

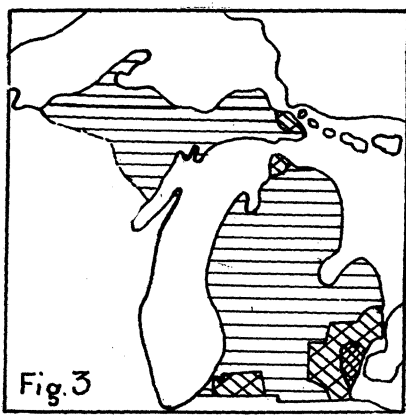


Fig.3

*Distribution of Population
1830*

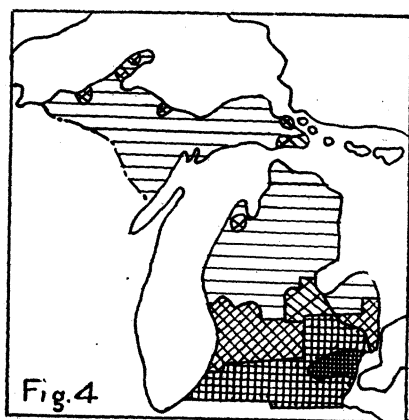


Fig.4

*Distribution of Population
1850*

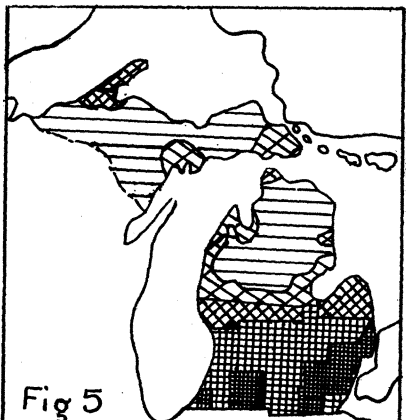
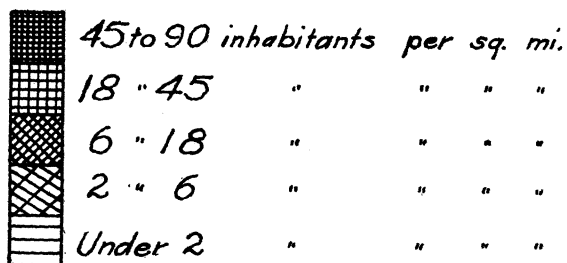


Fig 5

*Distribution of Population
1860*



whole settled area extended not over 30 miles north of the Grand River. During the period 1820 to 1830, 22,743 people settled in the state, an increase of population of 256 per cent. over the preceding decade.

During the decade 1830 to 1840 the southern tiers of counties became well settled. The population of the state increased nearly 181,000, or 571 per cent. There was a continuous stream of immigrants overland, and every steamer crossing Lake Erie to Detroit was crowded.* Many new counties were organized. In 1836 Livingston, Genesee and Kent Counties were established. Immigrants were attracted to Livingston by the grist mill situated at Brighton, and reached it over the Grand River Road.† Kent was occupied largely by settlers who came by lake and river through Grand Haven, the gateway to Ottawa County (1837).‡ After 1833-4 development along the Grand River was made very largely through this port. Before then (1827) it had been a trading station for the American Fur Company. The next year (1837) Eaton, Shiawassee, Van Buren and Ionia Counties were organized. Various interests aided in advancing their settlement. The lime quarries in the southern part of Eaton were an early attraction, while the heavy timber in the northern part attracted lumbermen in 1835-6, and the manufacture of pot and pearl ash and saleratus hastened the clearing of the land.‡ The fertile farm lands of Shiawassee County were opened by the Dexter Colony, which in 1833 followed an Indian trail into the region. Ionia owes its settlement at the time to the Grand River Road, and Van Buren was settled by a northward movement from Cass from which it was detached.† Barry and Clinton were organized in 1839, completing the southern tiers at the close of the period.

Lumbering Becomes Important. The excessive speculation and "wild cat" banking schemes which prevailed in Michigan between 1830 and 1840, together with the financial disasters and business failures of 1837-8-9, checked the flow of immigrants for a time. This was counteracted in part by the crop failures and "hard times" of New England, which resulted in extensive emigration from that section. Between 1840 and 1850, however, 185,387 new settlers arrived, which was more than during any previous decade. This represented an increase of only 87 per cent. as compared with the 571 per cent. of the decade preceding. The area occupied in 1840 became more densely settled and was extended a short distance northward (Fig. 4). During this period lumbering assumed con-

* Census of Michigan, 1904, Vol. 1, p. xxi.

† *Ibid.*, p. xx.

siderable importance. Sawmills multiplied at all accessible ports, and lumbering settlements grew up on all the branches of the Grand, St. Joseph and Saginaw Rivers.* The Grand Traverse region was off the regular route of immigration, and stories of its severe climate, the refusal of navigators to enter the bay until surveyed, the presence of a large Indian Reservation, and the granting of alternate townships as railway subsidy kept settlers away for some time. "Late in the forties a few pioneers, lured by the beauty of the scene, formed a little settlement at the head of the bay,"* which was the beginning of Traverse City.

Minerals Attract Settlers to Upper Peninsula. The settlement of the Upper Peninsula before 1840 was confined to the vicinity of the Sault. This region was looked upon as a wild waste, the resources of which were uncertain. In 1826 a large part of it was organized as Chippewa County, and in 1843 it was reorganized, but consisted of more territory than at the present time. By that time a few people had settled in Delta County, probably attracted by its lumbering and agricultural possibilities. Two years later Houghton County, including Marquette, Ontonagon and Keweenaw were organized. Most of this area had no agricultural value, but there were indications of mineral wealth. The copper and Marquette iron ranges were examined by the state geologist in 1843. The richest portion of the copper area extends through Keweenaw, and the easy access to the north caused miners to make this their headquarters (Fig. 4).† Veins of copper were plainly visible near Copper Harbor, and, in 1846, speculators flocked in. The discovery of iron deposits about Marquette opened a large area to rapid settlement. A mining company was started in 1849, but owing to poor transportation facilities no ore was shipped until 1856, the year after the Sault Canal was opened. By 1850 there were small isolated settlements in the Keweenaw-Marquette region, marking the location of valuable ores, and making a total population for the peninsula of "about 1600."‡

Forests Promote, Then Check Settlement. For the first ten years after 1850 the movement of the frontier in the Lower Peninsula was largely northward. The advance of lumbering along the lake shores extended the settled area to Traverse Bay and Au Sable, and Muskegon, Oceana, Mason, Manistee and Huron Counties were established. Several fishermen attracted to the Straits of

* Census of Michigan, 1904, Vol. 1, p. xxii.

† Census of Michigan, 1904, Vol. 1, p. xxiii.

‡ Peter White: Address at Semi-Centennial of Sault Canal, 1905, p. 21.

Mackinac remained and became permanent settlers after 1851. They started a village at Harbor Springs, on Little Traverse Bay, and in 1853 Emmet and Cheboygan Counties were organized. Up to 1850 the seclusion of Gratiot and Isabella Counties had caused them to remain a wilderness. In 1855 the price of land in these counties was reduced to 50 cents per acre for actual settlers. As a result there was a rush of immigration, and between 1854 and 1860 5,000 settled in Gratiot County alone, with no surplus provisions within 50 miles. From this situation it received the nickname Starvation Gratiot.

The dense forests and uninviting soil of the pine area in the northern half of the peninsula now acted as serious barriers, and for nearly 30 years (Figs. 5, 6, 7) the settlements were confined to or near the western, northern and eastern coast lines. With further development of the lumber business settlers penetrated into the interior from all sides. In this movement the many streams pointed the way and served as roads. During the first five years after 1860 the Civil War checked Michigan's growth. More than 90,000 of its men were in the army. By 1870, however, its population had increased 435,000, or 58 per cent. over 1860. At this time it stood at the head of the lumber producing states. In 1871 extensive lumbering operations were opened up in Roscommon, Gladwin and Clare Counties, and the same year the Counties of Lake, Missaukee, Kalkaska, Presque Isle and Clare were organized, and four years later Ogemaw, Roscommon and Gladwin. During the next three decades (1870-1900) the population of the state increased 104 per cent. It is evident from Figures 7, 8 and 9, that large numbers settled in the northern peninsula, many in the newer counties of the southern peninsula, and many in the denser settled areas farther south, especially in the cities. In 1900 only a small central area remained in the southern peninsula with six or less inhabitants to the square mile. During the next ten years (1910) the counties of this portion of the peninsula, except two, increased in population from 12 to 5,200 each (Fig. 12). At the same time Michigan lost nearly all its stately pines, there remaining over part of the interior only a barren, desolate waste of fire-blackened stumps on a sandy plain, overgrown in places by briars and the scrubby jackpine.

Mines and Lumber Dominate the Upper Peninsula. From 1850 to 1860 the population of the Upper Peninsula increased 807 per cent., 6 per cent. of which was in Delta and 8 per cent. in Chippewa County and the remainder (793) in the mining districts. The lumbering interests of Delta had attracted about 1,200 settlers, the

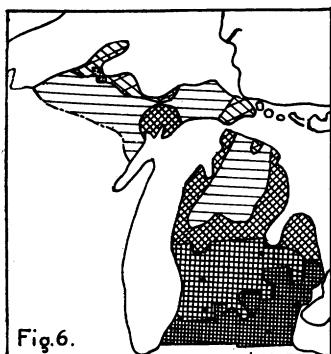


Fig. 6.

*Distribution of Population
1870*

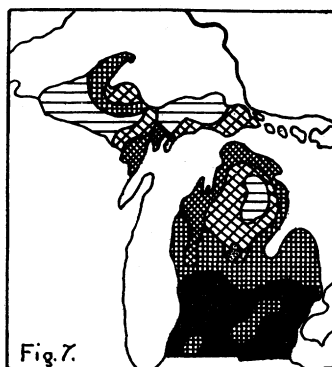


Fig. 7.

*Distribution of Population
1880*

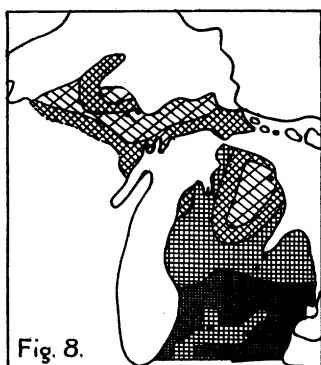


Fig. 8.

*Distribution of Population
1890*

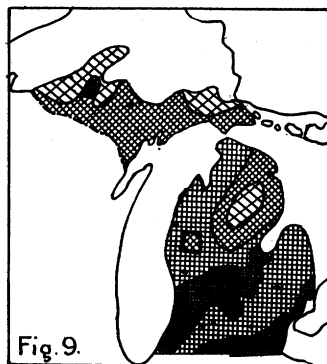


Fig. 9.

*Distribution of Population
1900*

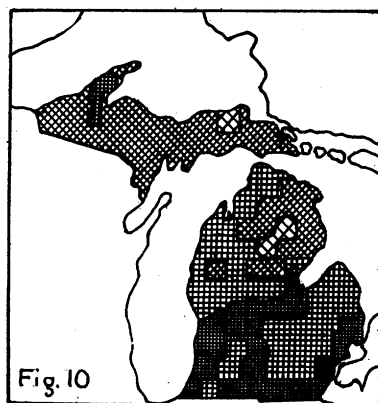
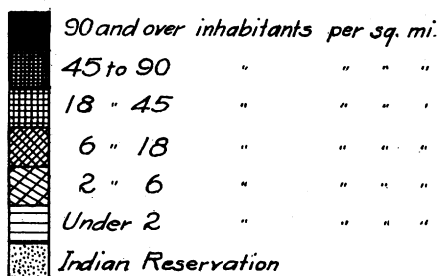


Fig. 10

*Distribution of Population.
1910*



river and lake facilities being especially favorable. People realized that vast wealth was to be had in the copper and iron mines, if the handicap of the Saint Marys rapids could be overcome. This was especially true of iron, copper being so valuable that it could stand the land haul.* All Lake Superior shipments had to be portaged around the rapids and the cost was prohibitive. In 1850 the cost of blooms after they had been taken from Marquette to Pittsburg was \$200 per ton, and the market price was then \$80, leaving a net loss per ton of \$120.†

The opening of the Sault Canal in 1855 gave a great impetus to the iron industry by the cheap transportation thus assured, and hence to the settlement of the region. Its limited draft of 12 feet, accommodating boats of about 400 tons, was soon found inadequate and it was enlarged and deepened to 16 feet in 1881 and to 21 feet in 1896. By 1866 the rates on iron ore from Lake Superior to Lake Erie ports had decreased to \$3.00 per ton,‡ by 1895 to 82 cents, and by 1906 to 67 cents.§ The influence of the canal upon the development of the Upper Peninsula can scarcely be overestimated. The rapid increase in population around the shores of Lake Superior may fairly be ascribed to it. From 1860 to 1870 population of the counties bordering the lake increased 116 per cent., from 1870 to 1880, 39 per cent., and from 1880 to 1900, 172 per cent. This gain was especially marked in the copper and iron mining counties. Houghton and Marquette alone gained 35,100 between 1860 and 1880, and 59,500 in the 20 years following. The lasting influence of the mines is evident from Figure 11, which shows the population increase for the last decade (1900-1910). The population of Houghton County increased 22,000, and that of Gogebic, Iron, Delta and Marquette from 5,500 to 6,600 each. Delta is not a mining county, but it contains Escanaba, the largest city in the Upper Peninsula, which is the most important iron shipping port on Lake Michigan. This city has increased its population by over 3,500 in the last ten years, while its neighboring lumber city, Menominee, has decreased over 2,000. In the eastern counties lumbering and agriculture dominate, and the increase varied from 790 to 3,100 each. The largest increase was in the city of Sault Ste. Marie.

The railroads and lumbering were also of importance in settling the region. Schoolcraft County, for example, was organized in

* Sen. Doc. 20, 58th Cong., 1st Sess., Vol. 3.

† R. D. Williams: *The Hon. Peter White: A Biographical Sketch of the Lake Superior Iron Industry*, p. 59.

‡ *Ibid.*, p. 164.

§ Chas. Davis: *Statistical Report of Lake Commerce*, 1906, p. 13.

1871, and although having an abundance of timber and rich agricultural lands, it remained a wilderness until the Detroit, Marquette and Mackinac Railroad passed through it.* Many of the railroads were built to secure the lumber traffic, and opened the country to settlement. Together with the flourishing copper cities of Calumet and Houghton and the thriving iron cities of Marquette and Ishpeming, grew up the lumber cities of Escanaba and Menominee.

The mining of copper and iron, the Sault Canal, and the lumbering industry have been the vital factors in the settlement of northern Michigan. Limited agriculture could have been carried on in the western part where the mantle of drift lay collected in the valleys and lowlands, or in the less rugged eastern part. It has always been, however, a minor factor in the settlement of this region. Mining has been and is to-day the dominating factor in the distribution and occupation of the people. Forests as a natural resource are second in importance. The opening of the Sault Canal and its subsequent enlargement wielded an enormous influence in the development of the region. It was the "connecting link" with the markets of the world, and without it the progress of the region must have been slow indeed.

PRESENT DISTRIBUTION OF POPULATION

Development During the Decade 1900 to 1910. The last decade of Michigan's development presents three phases: (1) general distribution, (2) changes within the state, and (3) urban versus rural population. The general distribution of population for 1910 is similar to that for 1900. Maps for both years (Figs. 9, 10) show three parallel segments of population extending across the southern half of the Lower Peninsula, the inner being less densely settled than the two outer. The inner segment corresponds closely with the hilly terminal moraine belt which is continued northward along the western border of the peninsula. The denser area at the north follows the outlet of the glacial Lake Saginaw and has a level to gently rolling topography and rich sandy to clay loam soil. Industrial development and intensive farming have progressed rapidly in this region. The dense area on the southeast always has had Detroit, Toledo and several smaller cities as easily accessible markets for truck and other farm products, thus encouraging intensive farming and a dense population. Nevertheless the attraction of the large cities has been sufficient to produce an absolute decrease in most of the counties of this area (Fig. 12).

*Census of Michigan, 1904, Vol. 1, p. xxv.

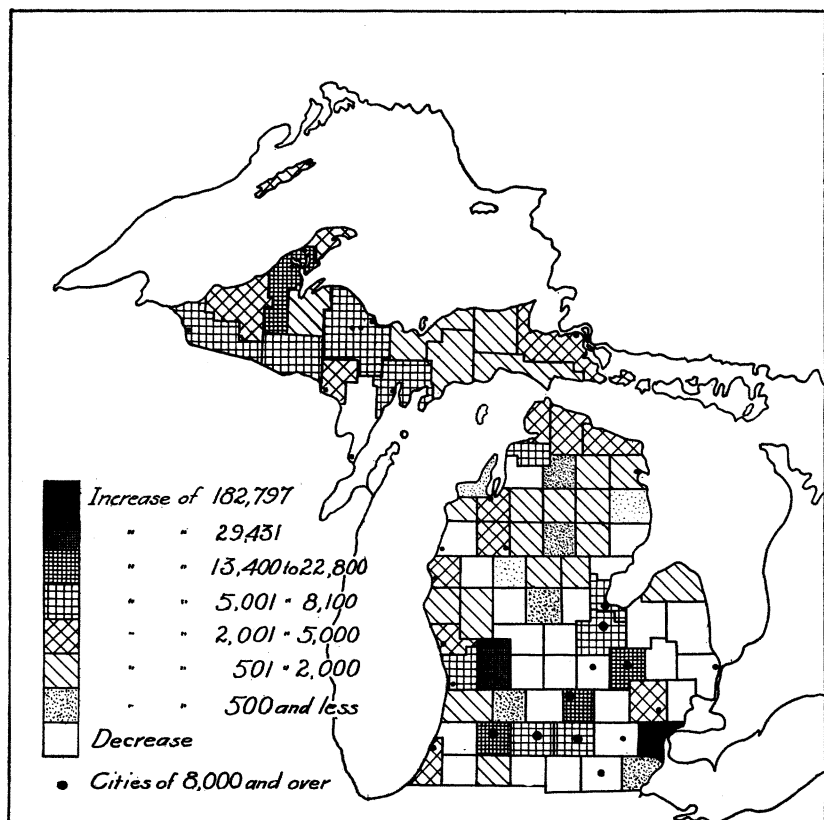


FIG. 11.—Increase of Population, 1900 to 1910.

Change in Distribution. Sixty-nine per cent. of the counties show an increase in population in 1910 (Fig. 11). The older southern half of the state is characterized by an increase in the counties having large cities, with the largest increase accompanying the largest cities. The line of counties of increase from Detroit to Saginaw, with counties on both sides which show a decrease, is a prominent feature. These counties have excellent interurban electric as well as steam transportation. Industrial development has been rapid, and the people appear to have been drawn in from all sides. Flint, occupying a central position in the line, nearly trebled its population in the decade, and Lansing, just southwest of it, nearly doubled. The automobile and allied industries of these two cities have grown rapidly and offered employment to thousands. Detroit, Grand Rapids, Kalamazoo, Battle Creek and Jackson have likewise enjoyed rapid industrial growth creating a demand for thousands

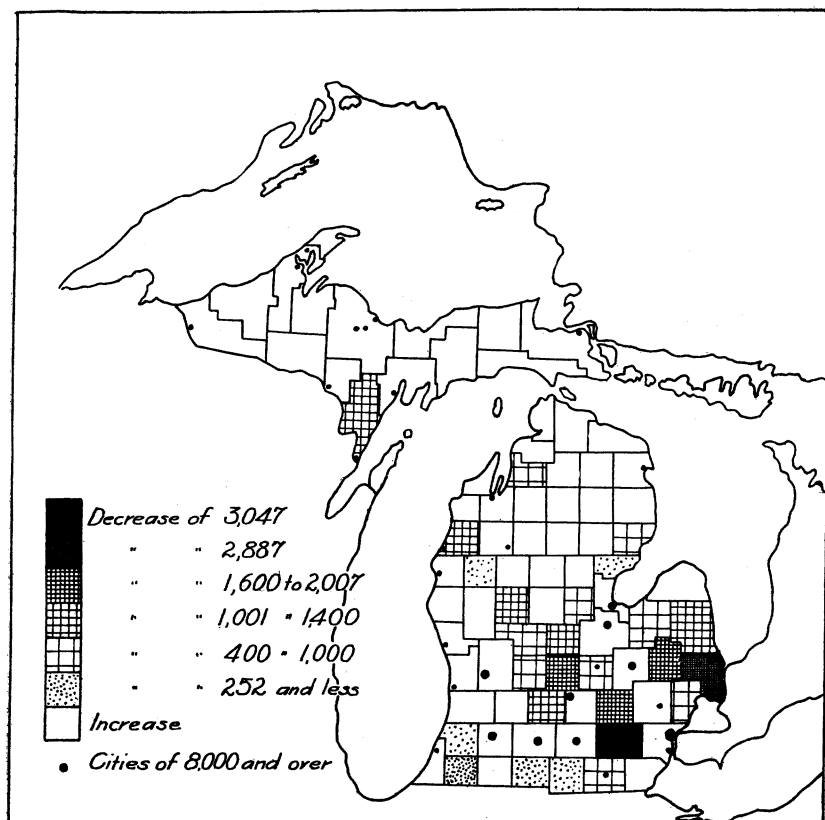


FIG. 12—Decrease of Population, 1900 to 1910.

of new laborers. The drain upon the surrounding country is evident.

The widespread increase in the Upper Peninsula and in the northern part of the Lower Peninsula is an important change. Large portions of these counties are still forested, other parts are very sandy and unfit for agriculture and some are too rugged for that purpose. Though considerable areas have been opened to settlement and considerably advertised in the past ten years, many of the counties have only a few thousand acres of improved land at present. They represent the new land of the state, and the tendency to abandon the old farm for a new and larger one is well shown, as many farmers have moved from the older southern counties to this region. The decline of lumber manufacturing in the area has also tended to increase the rural and decrease the city and village population.

Nearly all the counties showing a decrease are in the southern third of the state (Fig. 12). Only six have cities of 8,000, and without exception those counties are near to, and have excellent steam and electric railroad or water communication with those cities. In other words it is the old and strictly rural counties that are losing their inhabitants. Washtenaw County is a striking example, with thriving cities both east and west of it and with steam and electric railroad connections. Hundreds of people have left this county for Detroit and other nearby cities. This is equally true of the counties lying north and south of it. Menominee illustrates a declining lumber county which, thus far, has been unable to develop other industries rapidly enough to maintain its former position. Extensive advertising to regain lost prestige has been recently inaugurated by local interests.

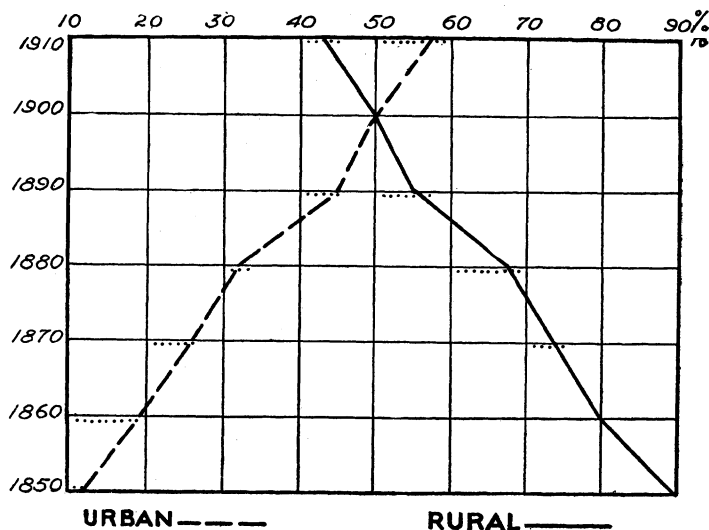


FIG. 13—Growth of Urban and Rural Population.

Rural versus Urban Population. The last century has witnessed a revolution in the relation of rural to urban* population (Fig. 13). In 1850 89 per cent. of the population lived in the country. Fifty years later rural and urban were equally divided, but by 1910 the rural population had decreased to 43 per cent. If the population of unincorporated villages, not farmers, was deducted this percentage would be still smaller. This movement toward the city has not been checked. Michigan has nine cities of 25,000 and over which ab-

* In this discussion all incorporated cities and villages are considered urban and the remainder rural.

sorbed 77 per cent. of the total increase for the last decade. All cities of 5,000 and over increased 44 per cent. and included 95 per cent. of the total increase, while cities and villages of less than 5,000 increased 8 per cent. It is, therefore, the larger places that are increasing most rapidly. Yet the tendency of manufacturers to

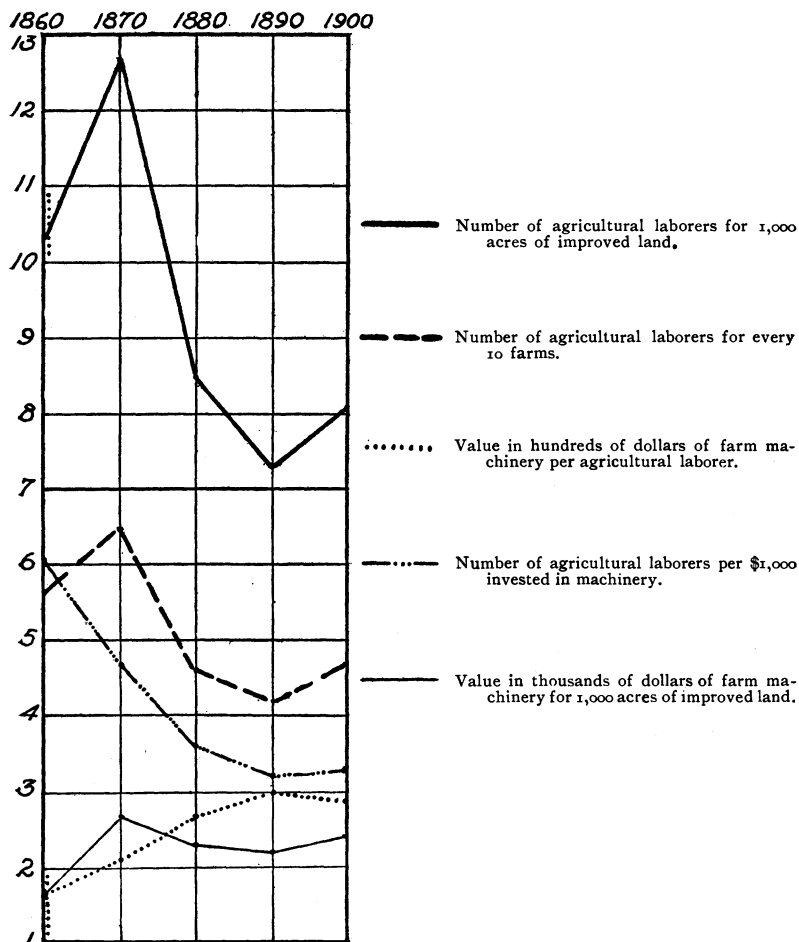


FIG. 14—Relation of Farm Machinery to Agricultural Laborers.

seek smaller towns to avoid labor troubles and excessive taxation is shown by the substantial growth of many places of moderate size. This is further emphasized by the fact that the total urban population increased 2.4 per cent. more than did the entire state, *i. e.* it equalled 102.4 per cent. of the total increase. This extraordinary

city-ward movement has been accompanied by an *absolute loss* in rural population of nearly 10,000, or 0.8 per cent.

The cause of this movement to the cities is both economic and social. Under the system of extensive farming the efficiency of farm labor was multiplied many times by the introduction and increased use of machinery. In 1870 there were about 13 farm laborers for 1000 acres of improved land. This decreased to seven in 1890 and increased again to eight in 1900. There are many difficulties in determining the exact relation between agricultural laborers and farm machinery, but the agreement shown in the five methods used is significant (Fig. 14). Whether the increase of 1900 is to be permanent cannot be told with certainty. The figures indicate that (1) the increase in intensive farming is giving employment to more people, or that (2) the ultimate effect of farm machinery will be an extension of agriculture and an increase in the number of agricultural laborers corresponding to the introduction and use of machinery in manufacturing industries. At the present time there is a large demand for farm laborers, but, to the energetic young man seeking rapid advancement, relatively low wages and long hours act as deterrents. Unless far more general adoption of intensive farming occurs with better financial returns, this movement from country to city apparently must continue. The city offers definite working hours and educational and social advantages that the country cannot. Its schools, libraries, churches, amusement parks and theaters appeal to the young man and woman from the farm as never before. The telephone, free mail delivery, rural high schools, libraries, and the general agricultural prosperity of recent years has not, as yet, been effective in checking the movement. It is obvious that the curves shown in Figure 14 cannot continue indefinitely at the present rate of increase, but there is no indication of the time when they will become parallel lines.

Distribution of Rural Population. The distribution of the decreasing rural population and some of the factors influencing it should be considered. Its close relation to intensive farming and size of farms is shown by Figures 15 and 16. One is almost the counterpart of the other. Houghton County has the highest density per square mile. If unincorporated villages were reported separately by the census this density would be reduced, as the county has about twenty such villages in which large numbers of the miners live.* In addition to this the rural population is principally Fin-

* Personal letter from William Bath, Commissioner of Schools for Houghton County.

nish, with an average family of seven.* They practice intensive agriculture, on the limited area of improved land, for the local market.*

Perhaps the most conspicuous feature is the dense area extending from Saginaw Bay to the southwestern corner of the state. The average size of farms varies from 64 to 84 acres. In the east the soils are clay and sandy loams deposited in the glacial Lake Sagi-

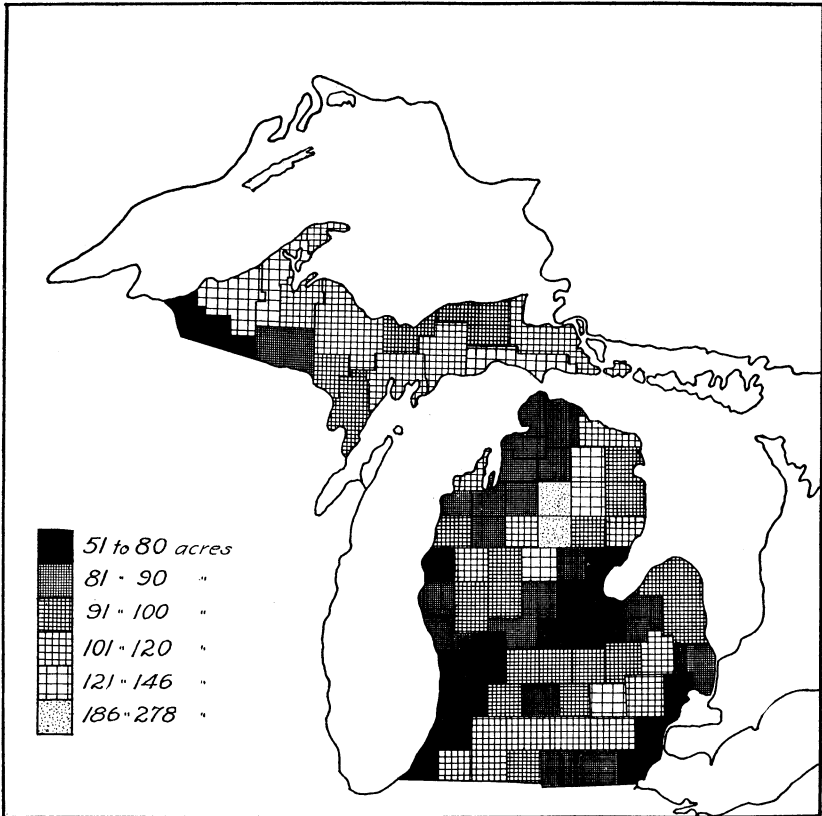


FIG. 15—Average Size of Farms in 1904.

naw, and suited to the sugar beet, truck gardening and other intensive crops. Large cities with a manufacturing population and excellent transportation give a constant market. In the west and southwest a sandy soil, moderated lake climate, a growing summer resort business, efficient rail and lake shipping facilities to large city markets, have been effective in bringing truck gardening and fruit

* Personal letter from William Bath, Commissioner of Schools for Houghton County.

growing to a high state of perfection. The fruit growing industry has spread north along the lake and is chiefly responsible for the relatively dense population found there.

The dense area along the southeastern border is nearly flat with sandy and clay loam soils formed in the glacial Lakes Whittlesey and Warren. It is covered by a network of steam and electric railroads, supplemented by steamboat service on Lakes Erie and St.

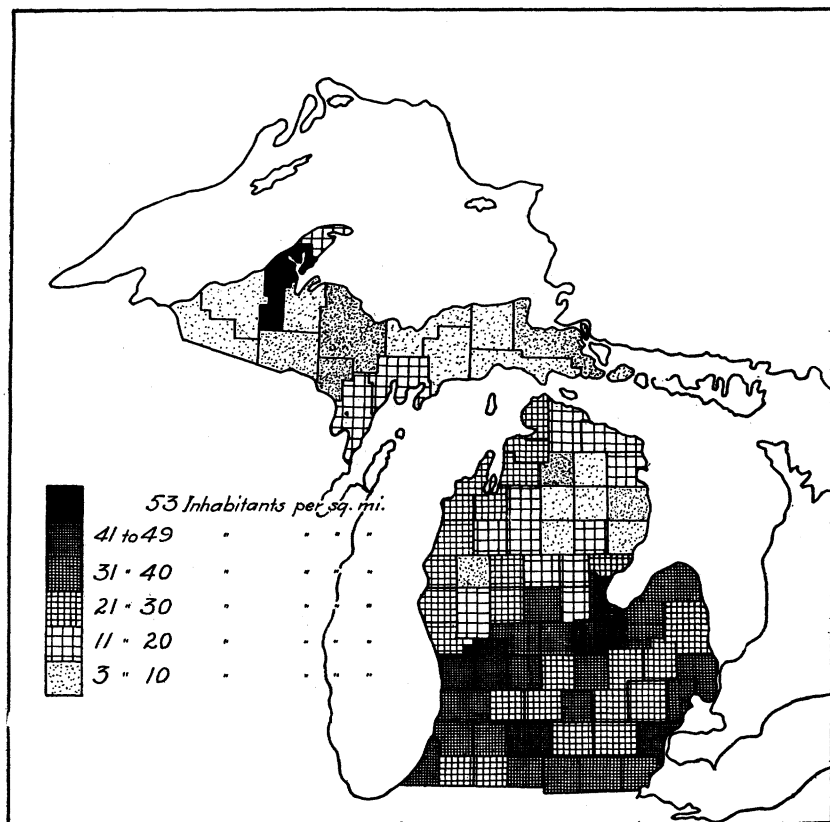


FIG. 16—Distribution of Rural Population in 1910.

Clair and the Detroit River. Cities like Detroit, Toledo and Port Huron constitute a market for agricultural and dairy products equaled in few other parts of the state. The average-sized farm is 82 acres (Fig. 15), and intensive agriculture prevails. The higher density of Wayne County is due in part to the large suburban population made possible by the interurban electric lines radiating from Detroit.

The belt of relatively less density lying between the central low-land and Detroit areas is a terminal and ground moraine country. Its topography varies from gently to sharply rolling, and its soil from stiff glacial clay to sand. The average-sized farm exceeds 100 acres, and much less intensive farming prevails than in the adjoining areas. There is a strong tendency to cling to the old crops, yet less dependence on a single crop has developed. In recent years stock feeding on the farm crop and the dairy industry have made considerable progress, but there is splendid opportunity for further development.

The northern areas of small density represent the relatively new land of the state. Forests still exist over portions of them. Thousands of acres in the western part of the Upper Peninsula are too rugged to support a population that tills the soil, but pasturage and forestry offer future possibilities. The eastern half of the peninsula together with the northern half of the Lower Peninsula are better suited to agriculture, and an increase in the rural population may be expected. Part of the central portion of the latter region is very sandy and when burned over becomes a region of drifting dunes wholly unfit for anything but scientific forestry. These areas will ultimately be eliminated from settlement, the good agricultural land used for that purpose, and a dense rural population will be supported.

Sources of Population. Nearly all the states and many foreign countries have contributed to Michigan's population. The chief contributors among American states have been the New England States, New York, New Jersey, Pennsylvania and Ohio, and among foreign countries, the British Isles, British America, Germany and

NATIVITY OF POPULATION IN 1850.

STATES	NUMBER	PER CENT. OF TOTAL POPULATION	COUNTRY	NUMBER	PER CENT. OF TOTAL POPULATION
Vermont.....	11,113		Ireland.....	13,430	
Massachusetts.....	8,107		England.....	10,620	
Connecticut.....	6,751		Scotland.....	2,361	
New Hampshire.....	2,744		Wales.....	127	
Maine.....	1,117		British Isles.....	26,538	6.6
Rhode Island.....	1,031				
New England.....	30,923	7.7	British America.....	14,008	
New York.....	133,756	33.6	Germany.....	10,070	
Ohio.....	14,677		Holland.....	2,542	
Pennsylvania.....	9,452				
New Jersey.....	5,972				
Total.....	163,457	41.1			
Total.....	194,380	48.8		53,158	

Holland. By 1850 New England had sent 30,900, or about 8 per cent. of the total, and New York 133,800, or 67 per cent. of those coming from the United States, and 34 per cent. of Michigan's entire population. Ohio had furnished 14,700 and New Jersey and Pennsylvania combined about 15,000. At the same time Michigan had a foreign population of 54,852, 97 per cent. of which came from the countries mentioned above. Ireland and England sent 24,000 and Germany 10,000. In more recent times the native population has been increasing and the foreign decreasing. In 1880 76 per cent. of the inhabitants were native-born and 24 per cent. foreign-born, while in 1904 the former element comprised 78 per cent and the latter 22 per cent. of the total. The foreign element is unequally distributed throughout the state. The Upper Peninsula, especially the mining counties, has the highest percentage of any section. This is the only section of the state showing an increase in the foreign population. It has 20 per cent. of the total foreign-born, showing an increase in the decade 1894 to 1904 of 11,773, or 12 per cent. Although the actual number of foreign-born in this section has increased, the ratio to total population has decreased in the same period. The foreign element show a tendency to concentrate in the cities. In 1904 the cities of the state had a population of 1,036,249, 27 per cent. of which was foreign-born, while the villages and rural districts had a foreign population of 17 and 19 per cent. respectively. The cities contained more than two-fifths (40.9%) of the total population, and over one-half (50.6%) of all the foreign-born.

There were two principal economic reasons for emigrants seeking new homes in Michigan. "In New England there was a never ceasing desire 'to see how things went in other parts'; a desire to find a land that offered better advantages for accumulating wealth than was found at home."* By 1830 all the available lands had been taken up and hillside farming had begun, especially in Vermont. The young men who found it difficult to support themselves on 100 acres or less, turned to the free land of the West.† The crisis of 1837 and crop failures the same year brought them economic distress and increased the number migrating. As late as 1850 the average price of New England farm land was \$26.43, while in Michigan it was but \$14.32, and good Government land could be had for \$1.25 and \$2.50 per acre. At the same time New York land was bringing \$34.00, New Jersey land \$49.16, Pennsylvania land \$31.10, and Ohio land \$23.09, on the average. Not until

* W. V. Pooley : *Settlement of Illinois, 1830-1850*, p. 335.

† *Ibid.*, p. 336.

sometime between 1860 and 1870 did the average price of Michigan land equal and exceed that of New England, while at no time has it equaled the price in the other states named. In addition to the difference in the price of land, the migration from Ohio un-

FARM-LAND VALUES FROM 1850 TO 1900.

STATES	1850	1860	1870	1880	1890	1900
Connecticut	\$34.43	\$41.72	\$49.07	\$55.10	\$47.95	\$49.01
Maine	14.68	17.01	17.97	18.89	19.80	19.43
Massachusetts.....	36.33	41.90	40.58	48.91	49.25	58.04
New Hampshire	19.58	22.24	22.03	23.84	23.19	23.78
Rhode Island.....	34.48	42.55	40.61	56.41	53.66	59.24
Vermont.....	19.09	26.72	29.77	26.79	23.16	22.96
New England.....	26.43	32.02	33.33	38.32	32.63	38.74
New York.....	34.01	44.64	53.89	51.16	51.88	47.23
New Jersey.....	49.16	67.75	76.76	72.59	68.54	66.71
Pennsylvania.....	31.10	44.33	53.12	55.35	57.88	54.29
Ohio.....	23.09	37.91	44.23	51.44	51.20	48.93
MICHIGAN.....	14.32	27.08	36.87	41.59	43.82	39.31

doubtedly represents a recognition of the shipping advantages of lakes over rivers. For a number of years previous to 1840 the staple exports—wheat and flour—found their best markets at lake towns rather than at river towns*. For this reason the farmer wanted his farm as near lake navigation as possible, and therefore he moved from the river to the lake region and to a state where land was cheap.†

To the foreign immigrants Michigan offered cheap lands, equal opportunity and social equality, things denied them at home. In later years it offered work in its lumber camps, mines and mills, and it was easily accessible from Europe by way of New York and Quebec at a minimum expense of time and money.

The tide of emigration from New England began between 1830 and 1837. Probably no other settlers have wielded so potent an influence in the affairs of Michigan. This influence first became apparent when Winthrop Sargent of Gloucester, Massachusetts, became first governor in 1795. Other early governors were William Hull of Connecticut (1805) and Lewis Cass of New Hampshire. The latter held the office for 16 years beginning in 1813. Every New England state has furnished a governor for Michigan, while all except Connecticut have supplied a superintendent of public instruction. For 66 years these two offices have been filled by New Englanders. In 1878 a volume was published entitled "Representative Men of Michigan," containing sketches of 1,158 of the more prominent men of the state; 288 of these were native New

* J. W. Scott in *Hunts Merchant Mag.*, Vol. 9, p. 37.† *Ibid.*

Englanders and 182 sons of New Englanders. These two classes comprised 40 per cent. of the representative men.

When Michigan completes (1) its crop adjustment to soil, climate, and market, and (2) its transportation facilities, it will have secured the maximum agricultural value of its geographical and geological advantages. Its population will then assume a more permanently stable character, similar to that which now characterizes the older European states. This process is well under way, and, though it works slowly, the ultimate results are certain.

PROFESSOR BOWMAN'S EXPEDITION TO THE CENTRAL ANDES

In the period from April to October, 1913, Professor Isaiah Bowman of Yale University will conduct a South American expedition under the auspices of the American Geographical Society of New York. The field of investigation is that part of the Central Andes lying in northwestern Argentina and adjacent portions of northern Chile and southwestern Bolivia. The accompanying map shows the field of Professor Bowman's work, the route he proposes to follow and the routes of his two earlier journeys.

Professor Bowman conducted the Yale South American Expedition of 1907 to northern Chile and Bolivia and was the geographer-geologist of the Yale Peruvian Expedition of 1911. In the first expedition he explored portions of the desert of Atacama and the Maritime Andes, traced the shorelines of the ancient lake on the Bolivian tableland, and descended the Chaparé valley northeast of Cochabamba as far as the border of the Amazonian lowlands. In 1911 he descended the Urubamba between Rosalina and Pongo de Mainique by canoe and surveyed the great bend of that river, again entering the lowlands of the Amazon basin. This journey was recently reported in an article by Professor Bowman entitled "The Cañon of the Urubamba," which appeared in the *Bulletin* (Vol. 44, 1912, pp. 881-897). Later in the year he conducted the geographical and topographical division of the expedition across the Maritime Andes to the coast at Camaná, traversed the coastal desert to Molendo, and made additional studies on Lake Titicaca and the Desaguadero R. Papers and reports on the two earlier expeditions have been published in the *Bulletin of the American Geographical Society*,